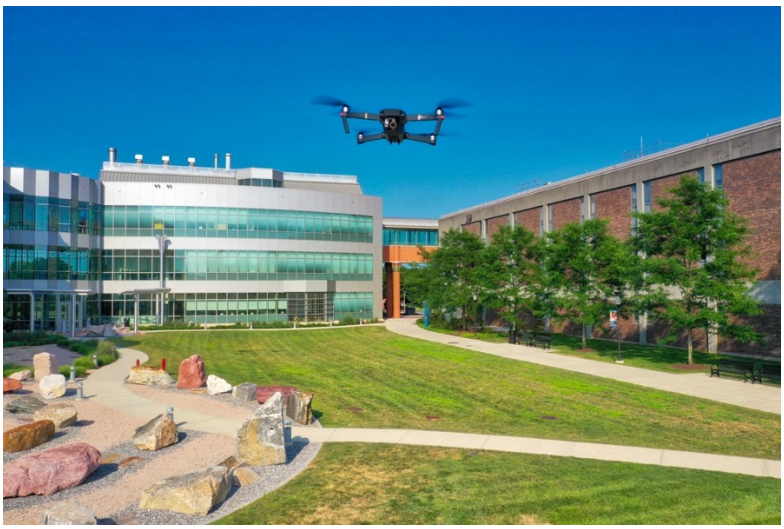
# GEO/JRN 170: Basic Drone Technology – *Fall 2025*



***Jennings Hall #342a  Monday/Wednesday  2:00pm – 3:15pm***


| |
|---|
| Professor Scott Graves, Ph.D. |
| Office Hours: Mondays 11am-12noon, Wednesdays 3:15-4:45pm, Fridays 11:30am-2pm<br>Or by appointment *JE 323 or 128e (drone lab in Blue Space)* |
| Phone: 203.392.6604<br>Email: GravesS1@SouthernCT.edu |


**Course Description:** This course examines the emerging technology of µUAS/drones for data acquisition in a multitude of forms, incorporating the video, still imaging and remote sensing potential of low altitude aerial platforms. Students will learn the basics of µUAS/drone flight systems and operation, in addition to the legal, ethical and safety requirements for flying µUAS/drones and getting licensed by the FAA. Imagery/data from student and faculty µUAS/drone flights are used for multimedia storytelling and landscape mapping.

**Required Books and Supplies:** Text for this course will consist of handouts provided by the professor.

**Course Rationale:** This Technological Fluency Course will be co-listed by the Departments of Environment, Geography, and Marine Sciences, and Journalism for teaching µUAS/drones as a data collection and production devices. No other University in the state is offering drone applications curriculum. It will also serve as an introduction to digital storytelling tools and remote sensing and form a base of a new Minor Undergraduate Program. This course introduces geography and journalism majors and non-majors to the skills and mechanics of using µUAS/drone technologies, and software, needed to be a successful geographer/journalist who uses low altitude aerial imagery and video to communicate on issues of the day. These skills form the foundation to higher level geography and journalism courses.

**Course Objectives: By the end of this course, students will be able to:**

- Understand the basics of flying drones for imaging purposes.
- Understand maintenance and safe storage of drone equipment.
- Understand the basics of safe drone flight planning and operations, planning and basic FAA flight rules and regulations.
- Work in teams of 2 or 3 to conduct safe drone flight operations, using Prof. Graves as Pilot In

Command, Spotters.
- Use Adobe Photoshop to edit and manage digital photos generated from drones.
- Use Adobe Audition create audio packages, edit basic podcasts and voiceovers.
- Use Microsoft Excel to create spreadsheets concerning drone logbook & maintenance and create simple graphics.
- Use Adobe InDesign to design logos, magazine and newspaper layouts.
- Use Adobe Premiere Pro to create and edit video generated from drones.
- Understand the basics of Structure from Motion software in the production of 3D Landscape maps and models.

***Liberal Education Program components***: This course fulfills the Tier 1, Technological Fluency category of our LEP. The purpose of the Technological Fluency category is to provide students fluency in contemporary and emerging technologies that transform the way we work, and to prepare them to respond to future technological changes. In today's highly technological society, comfort with and fluency in rapidly evolving technology provide students with a competitive edge professionally and with important tools for social interaction and collaboration.

***The main objectives of this category are the following:***

• Common Tasks - Solving problems, accessing information, and communicating information and ideas using appropriate technologies,
• Focus - Using emergent or recently developed technologies (hardware or software) to address specialized tasks,
• Future Technological Change - Navigating and adapting to future technological developments,
• Broader Implications - Being cognizant of ethical and social implications of revolutionary technologies, including but not limited to their impact on security, privacy, censorship, intellectual property, and the reliability of information.

***Required Equipment:***

***64GB USB3 drive or bigger ($12.00 - $20) for storing files, images, video & audio – Search Amazon*** –
A good one is: SanDisk 128GB Ultra Flair USB 3.0 Flash Drive - SDCZ73-128G-G46

***Suggested Equipment:***

***Tello Drone (DJI/Ryze):*** $133.00 (Tello drone $99, extra flight battery $17.28, & case $16.99)
from Amazon - https://www.amazon.com/Quadcopter-DJI-Technology-Accessories-Controller/dp/B078YLX1XJ/ref=sr_1_1?s=instant-video&ie=UTF8&qid=1547829480&sr=8-1&keywords=tello+drone
**OR** Boost Combo--https://www.amazon.com/Quadcopter-Batteries-Charging-Yellow-Covers/dp/B07HLFTLSD/ref=sr_1_7?keywords=tello&qid=1566921190&s=gateway&sr=8-7

There are a number of small basic drones that are available @ Amazon - Search "Drones under $100"
***Here's a good one: QuadAir Drone $99 - https://www.myquadair.com***
The others below you can find on Amazon.com
NEHEME Drones with Camera for Adults, NH760 1080P FPV Drone **$99**
Holy Stone HS440 Foldable FPV Drone with 1080P WiFi Camera **$99**
DRONEEYE 4DF10 Foldable Drone with 1080P Camera **$62**
DEERC Drone with Camera 2K HD FPV $67

**Course Format:** Meeting two times a week this class involves project discussion and software instruction in the computer lab and assignments. Homework assignments will be due prior to the start of each class.

**Course Requirements and Policies:**

**Attendance - 25%** You may miss one class without any impact on your grade. You will lose 10 points of your attendance grade for every absence thereafter.

**Assignments - 50% | Quizzes and exams 10% | Final project 15%**

***If you miss a class, it is your responsible to get any assignments and complete them.***

There will be NO FOOD or SNACKS or DRINKS are allowed in the GIS Lab.
The use of cell phones, beepers, etc., is prohibited in class, except where being used for assignment.
Policy on incompletes: Incomplete grades are frowned on in the EGMS department. Our policy is to grant incompletes only for a very serious cause and only if the student has sought and obtained the instructor's approval at least ten days before the end of the term. If you have not made proper arrangements your grade will be an F.

**SCSU EGMS Department Policy on Plagiarism and Academic Dishonesty**

Truth, honesty and integrity are important in any field, but particularly the sciences and the field of journalism where ethics and the public's ability to trust what they read, hear, and see are important in a democratic society. The following is presented to ensure students understand what constitutes plagiarism and academic dishonesty, and what we expect of you as students. These 11 points are not exclusive. See the university definition of academic dishonesty in the student handbook.

**The Acts:**

1. If you include a passage that is word-for-word from another published or broadcast document (including from the internet) without attribution, that is plagiarism.
2. If you include a passage that is word-for-word from another published or broadcast document (including from the internet), with attribution that comprises the bulk of your writing, that is plagiarism.
3. If you cite a human source or sources from another published news organization or other publication (including from the internet), and that source or those sources comprise the bulk of the sources used in your own writing, that is, for all intents and purposes, plagiarism.
4. If you use another news organization's story to write a story that you did not cover but are writing it as if you were there and did cover it, that is plagiarism.
5. If you create characters who do not exist and use them as sources for your story, that is fabrication, which is academic and journalistic dishonesty.
6. If you produce a story — including text, photos or video — for one class (or internship), then use the same story in another class without both instructors' approval, that is double dipping, which is academic dishonesty.
7. If you produce an assignment for one class that is corrected, edited or graded, then hand in that assignment to another class, that is considered academic dishonesty.
8. If you hand in a story with your name on it that someone else wrote, that is academic and journalistic dishonesty.
9. If you hand in a story with your name on it for which someone else did the research or interviewing, that is academic and journalistic dishonesty.
10. If you hand in a story with your name on it for which someone else did the editing or rewriting, that is academic and journalistic dishonesty.
11. If you use a photograph, image or song without permission and/or without credit to the source, that is a copyright violation, which is a form of plagiarism.

**The Consequences:**

1. All acts of suspected plagiarism or academic dishonesty will be reported to the EGMS chair, and the Dean of Arts and Sciences and may be referred to the university Judicial Affairs Office.
2. An act of plagiarism or academic dishonesty may result in failure on the assignment, failure of the class, removal from the EGMS Department, as well as other possible sanctions.

**Need for accommodations:**

SCSU provides reasonable accommodations in accordance with the Americans with Disabilities

Act and Section 504 of the Rehabilitation Act, for students with documented disabilities on an individualized basis. If you are a student with a documented disability, the University's Disability Resource Center (DRC) can work with you to determine appropriate accommodations. Before you receive accommodations in this class, you will need to make an appointment with the Disability Resource Center located at EN C-105A. To discuss your approved accommodations with me or other concerns, such as medical emergencies or arrangements in case the building must be evacuated, please make an appointment to meet as soon as possible.

**E-mail policy:** ***Always include your Full Name, Student ID# and class/section in your email header.*** I will try to answer e-mails within 36 hours during weekdays.

**Southern Connecticut State University Policy on Sexual Misconduct:**
Southern Connecticut State University is highly committed to providing you with an educational experience that is academically and socially enriching. In line with this mission, we enforce Title IX of the Education Amendment of 1972 which prohibits acts of sexual mis- conduct (sexual harassment, sexual assault, dating violence, domestic violence and stalking) at educational institutions. To report sexual misconduct students should contact University Police at (203) 392-5375 or 911, and/or Pamela Lassiter, Office of Diversity and Equity, at (203) 392-5491and/or Christopher Piscitelli, Office of Judicial Affairs, at (203) 392-6188. For advocacy and further information including your Title IX rights and reporting procedures visit the Sexual Assault Resource Team (S.A.R.T.) website at www.southernct.edu/ SART/. Please contact Catherine Christy, Women's Center and S.A.R.T. Coordinator, at (203)392-6946 for assistance or with any questions regarding support and advocacy.

***Anticipated CLASS SCHEDULE - Subject to change. Specific assignments will be announced.***

***Week 1.*** Class introduction, Part 107 and flying drones, types of drones (purchase the Ryze/DJI Tello or comparable mini UAS/drone ASAP) **Video viewing for next week**: MS Excel & Photoshop

***Week 2*** Basics of flying Tello. DJI Mavic Mini, Simple Adobe Photoshop - captioning, toning, sizing. Compression***.*** Basic camera types and controls on drones. Simple Adobe Photoshop - stitching panoramas***.*** **Video viewing for next week:** Photoshop & InDesign

***Week 3 -*** Drone flight 1, DJI Mavic Mini

***Week 4 -*** Drone flight 2, DJI Mavic Mini, Adobe InDesign - basic tools and poster creation

***Week 5 -*** Adobe InDesign - basic tools and page layout
**Video viewing for next week:** Adobe Premiere

***Week 6 -*** Basics of flying using Tello & DJI Mavic Mini, µUAS & Intro to Adobe Premiere, Drone flight 3. Editing in Adobe Premiere

**Video viewing for next week:** Adobe Audition

***Week 7 -*** Adobe Audition - basic audio. editing, create a drone related podcast Basics of Excel data and graphics, creating operational spreadsheets (Drone Log Books).

***Week 8 – Prof. Graves in Iceland - Guest Speaker and self-guided assignments (FAA TRUST, etc.)***

***Week 9 -*** Adobe Premiere RUSH, and DJI Fly app

***Week 10 -*** Google Earth and the God's eye view. Mavic Pro2 360 spherical panorama, Smart Modes – automated https://www.youtube.com/watch?v=XpW2luvnQaA

***Week 11 -*** Structure from Motion

***Week 12 - TBA.....***

***Week 13 -*** Final Project – Adobe Premiere, Cinematic Drone Videos, with voice over, background music, lower thirds, Intro and Credits with transitions between all 5 cinematic shots.

***Week 14 -*** Final Project – Adobe Premiere, Cinematic Drone Videos, with voice over, background music, lower thirds, Intro and Credits with transitions between all 5 cinematic shots.

***Week 15 -*** Final Project continued.

***Exam Week :*** *Final Project Completion*

# *SCSU Fall 2025 Calendar*

## FALL SEMESTER

| | |
|---|---|
| August 25, 2025 | Faculty Work Year Begins |
| August 26, 2025 | First Day of Classes |
| September 1, 2025 | Holiday, No Classes |
| November 26-30, 2025 | Holiday Recess, No Classes |
| December 7, 2025 | Last Day of Classes |
| December 8-14, 2025 | Final Examinations |